

# Guidelines for Making Health Education Work

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THE FREQUENT FAILURE of programs using mass communications media to modify health-related behavior in the community has led many decision makers in government and public health to discredit the use of these media for the health education of the public and, further, to discredit all educational approaches to the changing of behavior. As an alternative, they favor the manipulation of environmental factors which do not require decisions by individual persons.

We propose to (a) examine the promise and frustration underlying the mass media approach to health education, (b) diagnose the causes of this failure, (c) suggest guidelines for the production of health education materials that should gain in effectiveness that which they lose in audience size, and (d) suggest that, to be effective, the media used to educate or instruct must be considered but one component in a system of health education and care which also incorporates rationally planned interpersonal contacts and positive environmental factors.

## Mass Communications

A national comprehensive health education system would appear to be a potent device for good. Any improvement in health behavior multiplied by the numbers of persons accessible through the mass media would reduce the rapidly escalating costs of health care. It is easy to compute the economic savings of reduced absenteeism attributed to alcoholism, accidents, or illness. Aided by the optimistic but unsubstantiated assertions of the advertising industry (1), the commonly held conception of the power of mass media to market products has become associated with the health education objective of changing behavior.

It could be argued that it is efficient to centralize the production of health education materials in the communications industry. The industry's means of access

to the "health consumer," via print media, radio, and television, are well established. Statistics on the number of hours that the American family views the television screen and the sheer volume of the resultant daily audience are potent attractions for those health educators who feel that theirs is an important message which should be brought before the public.

There are other arguments for a mass media approach. Since, in many households, the television or radio set is on for a large portion of the day and many viewers appear to be indiscriminate in their program selection, the public would receive a health message without the necessity of voluntary action. In this sense, electronic mass media could be a more potent force than such traditional methods as the informational brochures which gather dust in physicians' offices and clinics. It is also argued that the potency of the message will be increased if it is packaged in a form which makes it palatable to the viewing audience. Thus, viewers have seen public service announcements transformed from the most crude and elementary productions to slickly designed devices utilizing the best of the advertising industry's talents. The production of the entertainment-health education series entitled "Feeling Good" is certainly the most ambitious effort to date to make mass media health education attractive and palatable.

And yet, what are the results? Although the jury is still out on "Feeling Good," in our opinion, there is enough evidence to be pessimistic about the effectiveness of this series as well as that of other mass health education efforts. The literature on the effectiveness of mass education techniques in promoting the use of automobile safety belts is consistently negative. Pryor (2) reported no increase in seatbelt usage, despite evidence that the mass media messages were viewed and understood by a large portion of the target population. Fleischer (3) in a large, well-controlled study, reported that public safety announcements distributed via radio and television had little significant effect on use or related attitudes.

As part of perhaps the most ambitious study of seatbelt promotion to date, Robertson and co-workers (4) reviewed a number of studies, all with consistently discouraging or inconsistent results. In their study, they attempted to compensate for the limitations of previous investigations in both design of message and method of gathering data. Since a preliminary survey

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revealed that fear of pain and disfigurement were powerful factors in influencing the wearing of seatbelts, five TV spot messages designed for their study incorporated this theme, along with the well-proved themes of physician endorsement and family responsibility. A sixth message, also done in the format of the 60-second spot commercial, was designed for children. The serious student of television is well aware of the ability of the 60-second spot to produce a potent dramatic message. By industry standards, all of the television messages in this study were very well done. And yet, a survey of the treatment and control populations during the 9 months that the spots were televised revealed no effect on safety belt use. The authors concluded that, rather than education, modification of environmental factors by mandatory requirements would be a more effective means of modifying behavior.

Evidence disputing the effectiveness of mass media approaches in modifying health-related behavior is contained in the literature documenting attempts to decrease the use of cigarettes. Bradshaw (5) in a review of the literature found no substantiated evidence that any of the intense publicity campaigns convinced people to smoke less.

The history of the adoption of other public health measures, such as the pasteurization of milk and the chlorination and fluoridation of water, offers interesting insights into the effect of public information campaigns on voter referendums (6). Typically, adoption of public health reforms has occurred more speedily when the decision was made by central authority rather than by referendum, despite public information campaigns. Sapolsky (7), in analyzing the history of the adoption of fluoridation, observed that public information campaigns frequently increased public resistance by exposing the potential dangers, however remote, of the innovation. Voters who are partially informed or uninformed on a topic were made aware of remote but potentially extant negative effects and opted for the conservative position of voting no on the innovation, pending the results of further experience elsewhere.

Nevertheless, instruction and knowledge have been shown to be important in modifying health-related behavior when information was conveyed in settings other than the mass media. Lonero and co-workers (8) in a study for the Ontario Ministry of Transportation and Communications, designed a lengthy, varied instructional program for groups of second and third graders advocating the use of seatbelts. They reported that immediately after the program, seatbelt use was observed to increase substantially among parents of children who viewed the program.

Caldwell and co-workers (9), in a study of the social and emotional factors influencing a patient's ability to continue anti-hypertensive treatment, identified accurate knowledge of the disease as the most potent factor in continuation of therapy. Tagliacozzo and Ima (10) re-

porting on a longitudinal study of 159 patients with hypertension, arthritis, diabetes, or cancer noted that in-depth knowledge of one's disease was a strong predictor of continuance in therapy. The importance of a patient's knowledge about his disease as a factor in modifying his behavior to conform with a health regimen is particularly revealing in cases of hypertension. Unlike other disease states in which the patient is reminded of the disease by pain or discomfort, the hypertensive frequently feels well, and this absence of symptoms produces high dropout rates among those in anti-hypertensive therapy.

Knowledge of a disease can be a potent factor in behavioral change, even among people who feel well; yet campaigns using mass communications media are able to inform, but not change behavior. We contend that health education via the mass media is ineffective because these media violate many of the tested principles of the design and delivery of instruction (11). Although mass media attempt to incorporate many of these principles to varying degrees, their attempts will, at best, be a compromise because of the limitations the media impose in seeking to reach a broad audience.

### **Media Guidelines**

In contrast to mass media, we advocate the use of instructional media in health education which are individualized to the frame of reference of the health problem, the behavioral outcome desired, and the characteristics of the target audience. We suggest that the basic slide show and audio tape produced by the neighborhood health center specifically for its own population may be more effective than the elaborate television spot broadcast on a national network. The rationale for this suggestion is that locally produced material can far more easily incorporate the following guidelines.

1. **Define outcome measures.** The health educator must have a clear idea of those changes in patient behavior which are the criteria for measuring the outcome of his teaching program. Attention to outcomes will not only give a firm basis for ultimate acceptance or rejection of a program but may also suggest specific parts of the message or delivery mechanism which need modification. The outcomes desired for the patients will, of course, indicate the affective content. For example, Levanthal and Watts (12) found that, compared with low and moderate fear arousal messages, a high fear arousal antismoking message depressed immediate action (volunteering for a chest X-ray) but did enhance cessation of smoking after 5 months.

2. **Analyze relevant characteristics of the learner.** As Rosenstock (13) suggested, public health information efforts must be based on clear knowledge of the nature and organization of the consumer's motives and on recognition of his beliefs about varying courses of action. This analysis of motives should pay particular attention

to factors in the patient's environment which can impede or facilitate the desired behavior. The safety spots developed by Robertson and co-workers (4) were an attempt to identify those factors which would motivate the public to use seatbelts. However, their lack of effect may be due to a failure to recognize and deal with those attitudes which impede seatbelt usage. Horn and Waingrow (14) presented the type of detailed analysis of the personality components of smoking behavior which may be necessary to understand complex health-related behavior.

**3. Gain and maintain the learner's attention.** Appeal to the learner's dominant interests and incorporate change, novelty, action, and color to maintain attention. At the same time, key points should be presented simply and in a straightforward manner.

**4. Establish the learner's vulnerability.** The patient must be convinced that the health message relates to him. Hochbaum (15) and Heinzelmann (16) found that perceived susceptibility was a strong motivation for seeking health care. One technique available to the instructional designer is to relate the condition under consideration to events common in the culture of the target audience.

**5. Demonstrate need for action.** Together with a perception of vulnerability a perception of the seriousness of failing to act must be established. Several studies in Kegeles' (17) review of literature on dental health care indicate that failure to seek adequate dental care is due to a general perception that dental problems are seldom serious enough to require action. The gravity of the message may be increased by the use of recognized authority figures, such as a physician, or by the vicarious experience of a character with whom the target audience can identify. Health advice given by respected members of the local community should have high credibility, and this tactic can only be used with locally produced material (18).

**6. Establish the learner as an agent.** Suggest some specific actions which the learner may take to avoid or mitigate the serious consequences presented. Where to buy, what to do, where to go—all should be suggested if appropriate. However, the instructional designer must be careful to keep these suggestions simple, to the point, and at the minimum necessary to facilitate recall.

**7. Establish the learner's effectiveness.** The target audience must be convinced that their actions will work. A demonstration of the effectiveness of health-related actions will help to avoid depression and serve as a precursor of reinforcement for proper action, which should be supplied through other mechanisms in the system as well. Statements by local community members affirming the positive outcomes of weight control, hypertension

therapy, or seatbelt use increase the credibility of the message.

**8. Provide for practice.** If at all possible within the constraints of the instruction or the overall health care system, opportunities for practice of the relevant action and feedback on performance should be provided. This practice may take the form of a short quiz built into the message or coordinated followup by a community health worker.

**9. Repeat key facts.** Key facts relating to vulnerability, seriousness, and actions to be taken should be repeated consistently within the message, as well as by professionals in the general health care system.

**10. Generalize to similar situations.** Provide for transfer of the relevant learning to situations beyond the context of the instruction. Refer to other circumstances and situations which require health-related action similar to that presented in the program.

### **Interpersonal Factors**

Individualized instruction which incorporates these 10 guidelines is likely to effect greater learning than mass instruction, but instruction alone is not sufficient to change behavior. Ayllon and Azrin (19), in a series of experiments, demonstrated that instructions must be accompanied by social reinforcement for behavior to be modified. Instructions provide a stimulus for behavior, which if performed, can be rewarded appropriately. Rewards for the expected behavior usually result in subsequent similar behavior. Individualized instruction via all media must be accompanied, then, by social reinforcement.

Just as there are guidelines for producing individualized instructional material, there are also guidelines for socially reinforcing the person who acts on the message (20). These guidelines follow:

**1. Know outcome measures.** The person who provides reinforcement to the learner must know what outcome behavior is expected from listening or seeing the instructional message. The behavior which is identified should be so clear and specific that the health professional, the target learner, and members of his family can determine exactly what behavior should be reinforced. A general message, such as the instruction to lose weight, must be accompanied by specific instruction regarding how much a person of a given height, sex, and age should weigh. Both the learner and the person providing the reinforcement must know clearly what outcome is expected, so that they can work together to attain the appropriate goals.

**2. Determine baseline behavior.** Specifying the outcome behavior tells both the health professional and client where they are going. Determining the baseline behavior tells them where they must start. To evaluate

the baseline behavior in relation to the outcome, the unit used to measure the behavior must be comparable. The units might be the number of times an act is performed in a given period, the intensity of the act, or specific units such as pounds and calories. The assessment of baseline behavior may include several behaviors which are prerequisites for final performance. The baseline assessment should be based on behavior in situations which provide discriminative stimuli for the behavior. In other words, the baseline behavior for a person who overeats should be the number of calories consumed under normal living circumstances rather than under unusual circumstances where the patient doesn't have access to food supplies.

**3. Structure a favorable situation.** After the baseline behavior has been assessed, a situation must be created in which it is likely that the desired behavior will occur and unlikely that competing behavior will occur. For example, persons who overeat should not be placed in situations where cookies are constantly available; rather, the cookies should be removed from the cookie jar and opportunities provided for behavior other than eating.

**4. Establish what motivates the patient.** The health professional or family member will need to determine with the learner what he or she considers rewarding. Rewards may include social rewards such as praise, recognition, or attention; tangible rewards such as food or money; or behavioral rewards such as engaging in certain activities. Knowing what the patient considers rewarding is necessary in order to withhold rewards for incompatible behavior or to provide rewards for desired behavior.

**5. Establish a trusting relationship.** Just as it is important to gain and maintain the learner's attention while she or he is seeing or hearing the message, it is important that the learner feel comfortable in the health setting with the reinforcing person (21). Furthermore, the contact period should be long enough so that the patient sees the health professional as trustworthy, straightforward, and honest (22).

**6. Shape desired behavior.** Behavior can be shaped by reinforcing successive approximations of the final performance, raising the criteria for reinforcement gradually, and presenting reinforcement immediately, contingent upon the behavior. Since it is seldom possible for the health professional to be in frequent contact with the patient, family members may need to be instructed on how to help shape the patient's behavior. The family members will need to observe the message from the media and understand all of the guidelines for reinforcing their loved ones. Since reinforcement of the learner can often be tedious, one of the main responsibilities of the health professional will be to reinforce the family members in their efforts with the patient.

**7. Reinforce intermittently.** Intermittent, rather than continuous reinforcement produces behavior that is more resistant to extinction. Also, in most health practice settings, continuous reinforcement is not practical or economical. It is to be hoped that the learner's need for reinforcement from other persons will be replaced by internal rewards for performing the behavior.

**8. Evaluate outcome behaviors.** Assessment of the learner's progress should be based on a continuous, objective record. The record provides information for evaluating the effectiveness of the rewards and also serves as a reinforcement mechanism for the learner, family members, and health professionals.

### **Environmental Factors**

Green (23) suggested in his model of health education that enabling factors in the environment affect the performance of outcome measures. Enabling factors, according to Green, include the availability of specific resources necessary for the patient to adopt the behavior in question. Such resources might include money, reinforcing persons, and physical abilities. For instance, instructions to have one's blood pressure checked weekly at a physician's office might not be followed because certain enabling factors are missing. Parker (24) listed the following factors which influence access to primary care or, in our example, factors which may prevent the patient from having his blood pressure checked weekly at the physician's office.

**1. Barriers relating to site and location.** The patient is not likely to follow health education instructions if the setting creates psychological barriers for him or if distance, time, or energy expenditures keep him from returning to the health care setting. For example, the patient or family who is supposed to see the physician weekly may not do so because it takes too much time and energy to make the trip.

**2. Barriers due to limited time when services are available.** The time most convenient for the patient to use health services may not coincide with the time most convenient for providers.

**3. Financial barriers.** Patients are not likely to follow health instructions if they cannot afford to do so. Preventive behavior, particularly, is likely to be given a low financial priority.

**4. Organizational barriers.** Long waiting times, complex, bureaucratically oriented policies, fragmented services, and so forth do not aid the patient in following health instructions.

### **Conclusions**

The purpose of this article is to emphasize the need for health professionals to consider the many aspects of

health education. Health education messages must be developed around sound educational principles, but messages or instructions alone do not effect behavior change. Reinforcement for following instructions in the media is also necessary. Clear messages and proper reinforcement need to be combined with consideration of the environmental factors which may enable or hinder the patient in making the necessary behavioral changes.

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## SYNOPSIS

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The results of a number of studies which have indicated the limited effectiveness of health education efforts using the mass media are reviewed. The cause of these failures, according to the authors, was the inability to apply a number of principles of effective design to the instructional materials used in the mass media. The basic slide show

produced by the neighborhood health center for its own population may be more effective than a nationally televised spot announcement because locally prepared material can be sharply focused on the learner's characteristics and the specifically desired outcome behavior.

The authors list 10 guidelines for the construction of effective instructional materials: define outcome measures, analyze relevant characteristics of the learner, gain and maintain the learner's attention, establish the learner's vulnerability,

demonstrate the needs for action, establish the learner as an agent, establish the learner's effectiveness, provide for practice, repeat key facts, and generalize to similar situations.

The principles of social reinforcement that must accompany health education instruction if behavior is to be modified are outlined. How environmental factors such as time, distance, expense, and the organization of health services hamper desired behavior outcomes is also discussed.